BOARD OF COUNTY COMMISSIONERS
AGENDA ITEM SUMMARY

Meeting Date: June 21, 2006 Division: County Attorney

Bulk Item: Yes ___ No XX Staff Contact Person: Pedro Mercado

AGENDA ITEM WORDING:
Discussion of the stormwater fee the City of Key West is charging the Key West International Airport and direction from the Commission on how the Commission wants the County Attorney to proceed.

ITEM BACKGROUND:
The City of Key West enacted a stormwater utility ordinance in 2002. KWIA commissioned two engineering studies showing the fee the City was charging the County was excessive. The County has met with City representatives on several occasions to try to resolve the disagreement over the appropriate charge. Pursuant to the County's most recent attempt to resolve the dispute, the County commissioned a drainage calculation study. The study has been completed and again shows the fees being charged by the City are excessive.

PREVIOUS RELEVANT BOCC ACTION:
None.

CONTRACT/AGREEMENT CHANGES:
N/A

STAFF RECOMMENDATIONS:
N/A

TOTAL COST: N/A **BUDGETED:** Yes ___ No ___

COST TO COUNTY: N/A **SOURCE OF FUNDS:**_____

REVENUE PRODUCING: Yes XX No____ **AMOUNT PER MONTH** _____

APPROVED BY: County Atty X OMB/Purchasing ____ Risk Management ____

DIVISION DIRECTOR APPROVAL: 6/13/06
SUZANNE A. HUTTON, COUNTY ATTORNEY

DOCUMENTATION: Included XX Not Required_____

DISPOSITION:_____ **AGENDA ITEM #**_____

Revised 2/05

Florida Keys Marathon Airport

Monroe County, Florida

USER FEE ESTIMATION

For

Automobile Parking Lots
Resurfacing Taxiways and Apron
Resurfacing Runway
Hangar Development, Taxilanes and Apron
Basin A, D, F and outside of 27 End

PREPARED BY
URS CORPORATION
7650 CORPORATE CENTER DRIVE
SUITE 400
MIAMI, FL 33126
CA. # EB00000002

May 25, 2006

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DESCRIPTION

The drainage reports for the following projects in the Key West International Airport have been analyzed to estimate the user fee cost per month. The projects, report dates and drainage basin areas evaluated are:

Projects	Date	Basins
Automobile Parking Lots	June 1998	A7 (a, b, c, d, e)
Resurfacing Taxiways and Apron	February 2000	A1, A2, A3, A4, E1, E2
Resurfacing Runway	January 2003	A5, A6, E3
Hangar Development, Taxilanes and Apron	December 2003	B1, Parking Lot
New Terminal Building and Renovation	February 2006	A, D, F, Outside 27 End

The user fee estimation uses the information provided in these reports for the evaluation and determination of the impervious area with treatment and the impervious area without treatment. The summary table includes the 17% reduction determined in the Analysis of the Storage Volume and the 100 Year Runoff Volume Report. (See Figure 1 for Basin configuration)

On Exhibit "A" URS has included the analysis of the storage volume and the 100 year runoff volume

URS

Made by: _____ Date: _____
Checked by: _____ Time: _____
Page: _____ of _____

KEY WEST INTERNATIONAL AIRPORT
STORMWATER MANAGEMENT

USER FEE ESTIMATION

Project	Basins	Impervious Area (with treatment) (Ac.)	Impervious Area (w/ treatment) (17% reduction) (Ac.)	Impervious Area (without treatment) * (Ac.)	Total Area considered for stormwater user fee (Ac.)	User Fee ($/Month)
AUTOMOBILE PARKING LOTS	A7 (a,b,c,d,e)	1.19	0.98	0.00	0.98	122.24
RESURFACING TAXIWAYS AND APRON	A1,A2,A3,A4,E1,E2	21.84	18.04	0.00	18.04	2,245.39
RESURFACING RUNWAY	A5,A6,E3	22.59	18.68	1.58	20.24	2,519.14
HANGAR DEVELOPMENT TAXILANES AND APRONS	B1 AND PARKING LOT	3.50	2.89	0.00	2.89	359.84
EXISTING PORTION OF RUNWAY	A	0.00	0.00	2.11	2.11	262.60
EXISTING PORTION OF RUNWAY	D	0.00	0.00	2.80	2.80	348.48
EXISTING PORTION OF RUNWAY	F	6.90	5.70	0.00	5.70	709.40
EXISTING PORTION OF RUNWAY	Outside 27 End	0.00	0.00	2.11	2.11	262.60
TOTAL		56.02	47.62	8.60	56.22	6,996.50

* Estimated.

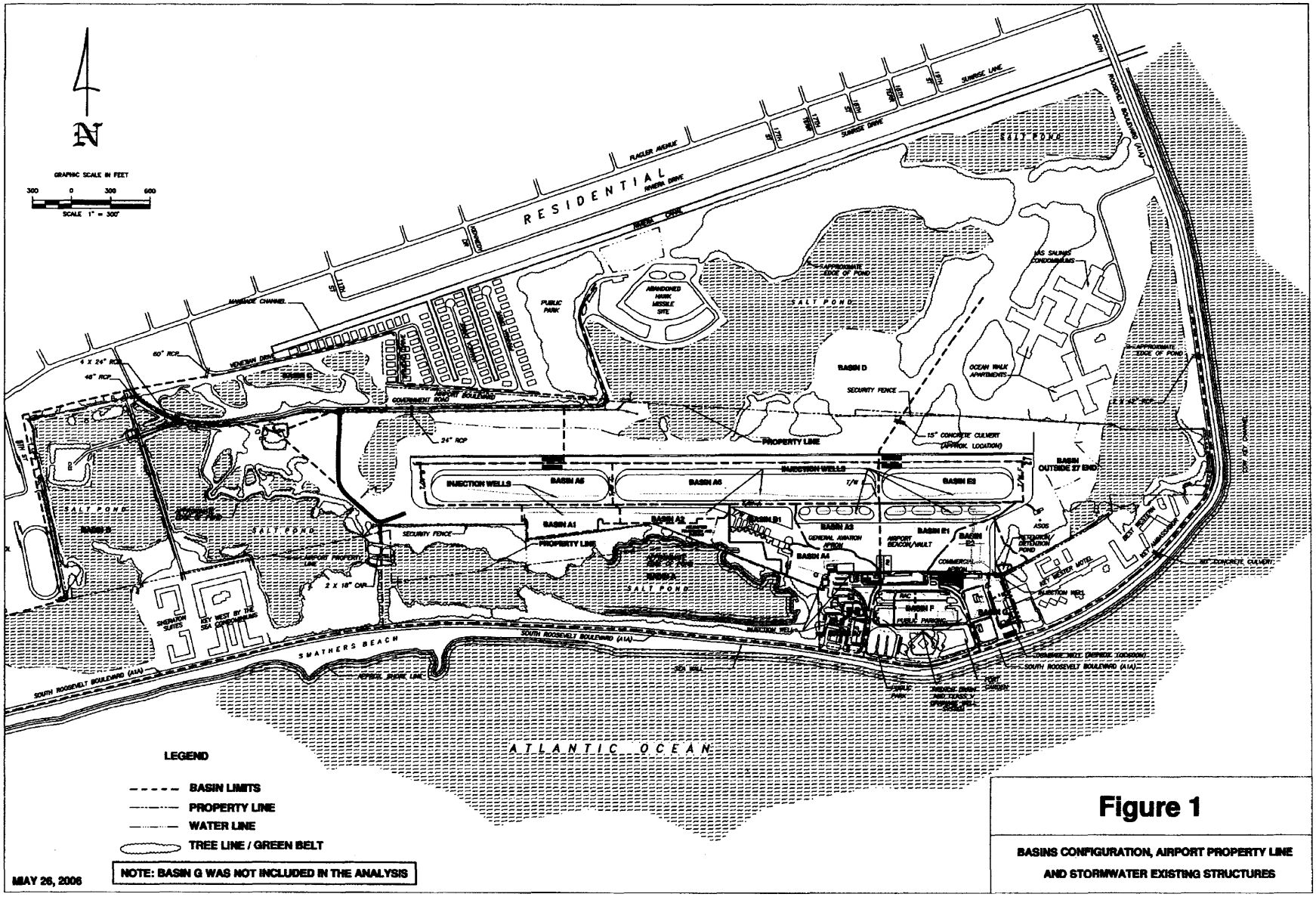

Figure 1

BASINS CONFIGURATION, AIRPORT PROPERTY LINE AND STORMWATER EXISTING STRUCTURES

EXHIBIT "A"

Florida Keys Marathon Airport

Monroe County, Florida

ANALYSIS OF THE STORAGE VOLUME AND THE 100 YEAR RUNOFF VOLUME

For

Automobile Parking Lots
Resurfacing Taxiways and Apron
Resurfacing Runway
Hangar Development, Taxilanes and Apron

PREPARED BY
URS CORPORATION
7650 CORPORATE CENTER DRIVE
SUITE 400
MIAMI, FL 33126
CA. # EB00000002

May 5, 2006

GERSON PEREIRA
P.E. # 61802

TABLE OF CONTENTS

DESCRIPTION

The drainage reports for the following projects in the Key West International Airport have been analyzed to compare the storage volume provided with the 100-year runoff volume. The projects, report dates and drainage basin areas evaluated are:

Projects	Date	Basins
Automobile Parking Lots	June 1998	A7 (a, b, c, d, e)
Resurfacing Taxiways and Apron	February 2000	A1, A2, A3, A4, E1, E2
Resurfacing Runway	January 2003	A5, A6, E3
Hangar Development, Taxilanes and Apron	December 2003	B1, Parking Lot

This report exclusively uses the information provided in these reports for the evaluation and comparison of the storage volume provided with the 100-year runoff volume. The summary of each project (Pages 2-5) includes the elevation at which runoff exits each basin, the storage volume provided, the 100-year runoff volume and the calculated difference between the storage provided minus the 100-year runoff volume. Excerpts of each page (from the above reports) providing data for this analysis is provided in Attachment A through Attachment D.

Projects	Attachment
Automobile Parking Lots	Attachment A
Resurfacing Taxiways and Apron	Attachment B
Resurfacing Runway	Attachment C
Hangar Development, Taxilanes and Apron	Attachment D

A summary table is also presented in page 6 for an overview of the difference between the total storage provided and the total 100-year runoff volume.

URS

Made by: GP Date: 5/5/2006
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KEY WEST INTERNATIONAL AIRPORT
STORMWATER MANAGEMENT
STORAGE VOLUME - 100 YR RUNOFF VOLUME ANALYSIS

AUTOMOBILE PARKING LOTS

BASIN A7 (a,b,c,d,e,)

Sub-Basin	[Pg. 18] Elev. At which Runoff Flows Offsite (Ft. NGVD)	[Pg. 18] Storage Volume Provided (Cu. Ft.)	[Pg. 20] 100-Yr Runoff Volume (Cu. Ft.)	Difference (Storage Provided - 100-Yr Runoff Volume) (Cu. Ft.)
A-E	3.82	11,353.01	70,821.07	-59,468.06
	(Ft. NGVD)	(Ac. Ft.)	(Ac. Ft.)	(Ac. Ft.)
	3.82	0.26	1.63	-1.37

URS

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Checked by: Time:
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KEY WEST INTERNATIONAL AIRPORT
STORMWATER MANAGEMENT
STORAGE VOLUME - 100 YR RUNOFF VOLUME ANALYSIS

RESURFACING TAXIWAYS AND APRON

BASINS A1,A2,A3,A4,E1,E2

Basin	[Pg. 36] Min. Elev. At which Runoff Exits Basin (Ft. NGVD)	[Table 3] Storage Volume Provided (Ac. Ft.)	[Pg. 38] 100-Yr Runoff Volume (Ac. Ft.)	Difference (Storage Provided - 100-Yr Runoff Volume) (Ac. Ft.)
A1	2.25	0.0870	4.27	-4.18
A2	2.35	0.0674	3.18	-3.11
A3	2.30	0.2357	6.62	-6.38
A4	2.55	0.0141	2.04	-2.03
E1	2.90	1.0908	9.46	-8.37
E2	2.20	0.1909	5.47	-5.28
TOTAL		1.6859	31.04	-29.35

URS

Made by: GP Date: 5/5/2006
Checked by: Time:
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KEY WEST INTERNATIONAL AIRPORT
STORMWATER MANAGEMENT
STORAGE VOLUME - 100 YR RUNOFF VOLUME ANALYSIS

RESURFACING RUNWAY

BASINS A5,A6,E3

Basin	[Pg. 33] Min. Elev. At which Runoff Exits Basin (Ft. NGVD)	[Pg. 33] Storage Volume Provided (Ac. Ft.)	[Pg. 34] 100-Yr Runoff Volume (Ac. Ft.)	Difference (Storage Provided - 100-Yr Runoff Volume) (Ac. Ft.)
A5	2.9	2.66	12.84	-10.18
A6	2.9	4.15	17.84	-13.69
E3	2.9	2.78	9.61	-6.83
TOTAL		9.59	40.29	-30.70

URS

Made by: GP Date: 5/5/2006
Checked by: Time:
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KEY WEST INTERNATIONAL AIRPORT
STORMWATER MANAGEMENT
STORAGE VOLUME - 100 YR RUNOFF VOLUME ANALYSIS

HANGAR DEVELOPMENT TAXILANES AND APRONS

BASINS B1 AND PARKING LOT

Basin	[Pg. 20] Min. Elev. At which Runoff Exits Basin (Ft. NGVD)	[Pg. 8] Storage Volume Provided * (Ac. Ft.)	[See SCS Method Calculation] 100-Yr Runoff Volume (Ac. Ft.)	Difference (Storage Provided - 100-Yr Runoff Volume) (Ac. Ft.)
B1/Parking Lot	3.5	2.07	5.28	-3.21

* Extrapolated

URS

Made by: GP Date: 05/2008
Checked by: Time:
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KEY WEST INTERNATIONAL AIRPORT
STORMWATER MANAGEMENT
STORAGE VOLUME - 100 YR RUNOFF VOLUME ANALYSIS

TOTAL SUMMARY TABLE

Project	Basins	Storage Volume Provided (Ac. Ft.)	100-Yr Runoff Volume (Ac. Ft.)	Difference (Storage Provided - 100-Yr Runoff Volume) (Ac. Ft.)	Percent Storage Provided for 100 Yr Runoff (%)
AUTOMOBILE PARKING LOTS	A7 (a,b,c,d,e)	0.26	1.63	-1.37	16.03
RESURFACING TAXIWAYS AND APRON	A1,A2,A3,A4,E1,E2	1.69	31.04	-29.35	5.43
RESURFACING RUNWAY	A5,A6,E3	9.59	40.29	-30.70	23.80
HANGAR DEVELOPMENT TAXILANES AND APRONS	B1 AND PARKING LOT	2.07	5.28	-3.21	39.23
TOTAL		13.61	78.23	-64.63	17.39

ATTACHMENT A

MONROE COUNTY

Key West International Airport
Automobile Parking Lots "A" & "B"
Project Number: C502520.63
System Proposed: Full on site retention with drainage wells

DRAINAGE CALCULATIONS

BOARD OF COUNTY COMMISSIONERS

MAYOR, Jack London
Mayor Pro Tem, Wilhelmina Harvey
Keith Douglass, Commissioner
Shirley Freeman, Commissioner
Mary Kay Reich, Commissioner

James L. Roberts
County Administrator

C. Dent Pierce
Director of Public Works

June, 1998

Prepared By:
URS Greiner, Inc.
5805 N.W. 11th Street, Suite 340
Miami, Florida 33126

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BASIN - A5

SUBBASIN	REQUIRED RETENTION VOLUME (FT^3)	PROVIDED [1] RETENTION VOLUME (FT^3)
A	5553.61	5510.40
B	1482.55	37.12
C	2212.78	461.39
D	1698.70	1547.22
E	0.00	3796.88
TOTALS:	10947.64	11353.01

(1) OBTAINED FROM STAGE - STORAGE CALCULATIONS FOR ELEVATION 3.82

= ELEVATION AT WHICH POINT RUNOFF BEGINS TO FLOW OFFSITE

Basin A5

SUBBASINS	(CN=98) IMPERVIOUS DRAINAGE AREA (ACRES)	(CN=39) PERVIOUS DRAINAGE AREA (ACRES)	TOTAL DRAINAGE AREA (ACRES)	POST -DEV. WEIGHTED CURVE NUMBER
A - E	1.1890	0.3448	1.5338	83.19

SUBBASINS	S (INCHES)	Q (INCHES)	TOTAL RUNOFF VOLUME (FS)	CALCULATED MAXIMUM STAGE (1)	BUILDING FINISHED FLOOR ELEVATION
A - E	2.02	12.72	70821.07	5.26	5.61

(1) OBTAINED FROM STAGE - STORAGE CALCULATIONS

ATTACHMENT B

KEY WEST INTERNATIONAL AIRPORT
KEY WEST, FLORIDA

ENGINEER'S REPORT

FOR

RESURFACING TAXIWAYS AND APRON

AIP No. 3-12-0037-1500
PFC Application No. 4
Item Nos. 25437518401
25438518401
FDOT WPI Project No. 6826783-6826784
URS Greiner Woodward Clyde Contract No. C500002520.65

Prepared by:

URS Greiner Woodward Clyde

Miami, Florida

FEBRUARY, 2000

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APPENDIX "D"

DRAINAGE REPORT

RESURFACING TAXIWAYS AND APRONS

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TABLE 4: WATER QUALITY SUMMARY (5 YEAR-24 HOUR STORM)

Pg 28-33

Basin	Minimum elevation at which runoff exits basin	Time at which this minimum elevation is reached	Basin Storage Volume at this minimum elevation(AF)	Basin well discharge volume at this minimum elevation (AF)	Total Basin Retention Volume (AF)	Required water quality retention volume (AF)
A1	2.25	11.722	0.0870	0.5442	0.6312	0.59
A2	2.35	11.764	0.0674	0.4333	0.5007	0.48
A3	2.30	11.742	0.2357	0.7625	0.9982	0.99
A4	2.55	11.797	0.0141	0.3186	0.3327	0.33
E1	2.90	12.418	1.0908	0.9087	1.9995	1.41
E2	2.20	11.850	0.1909	0.6464	0.8373	0.75

N:\DESIGN\RESPC50286-1\000104PD.

TABLE 3: BASIN STAGE - STORAGE CURVES

Elevation	Basin A1	Basin A2	Basin A3	Basin A4	Basin E1	Basin E2
	Storage Volume (AF)	Storage Volume (AF)	Storage Volume (AF)	Storage Volume (AF)	Storage Volume (AF)	Storage Volume (AF)
1.0	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.1	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.2	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.4	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.5	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
1.6	0.0000	0.0000	0.0006	0.0000	0.0000	0.0000
1.7	0.0000	0.0000	0.0028	0.0000	0.0000	0.0000
1.8	0.0000	0.0000	0.0132	0.0000	0.0000	0.0114
1.9	0.0000	0.0001	0.0284	0.0001	0.0000	0.0385
2.0	0.0001	0.0016	0.0576	0.0004	0.0000	0.0757
2.1	0.0057	0.0073	0.1029	0.0015	0.0027	0.1262
2.2	0.0426	0.0168	0.1587	0.0031	0.0224	0.1909
2.3	0.1313	0.0413	0.2357	0.0052	0.0654	0.2717
2.4	0.2681	0.0934	0.3319	0.0078	0.1454	0.3709
2.5	0.4467	0.1807	0.4498	0.0115	0.2534	0.4905
2.6	0.6696	0.3073	0.5882	0.0167	0.4012	0.6324
2.7	0.9369	0.4700	0.7555	0.0252	0.5861	0.7988
2.8	1.2390	0.6677	0.9534	0.0363	0.8125	0.9921
2.9	1.5638	0.8906	1.1848	0.0503	1.0908	1.2134
3.0	1.9009	1.1290	1.4519	0.0694	1.4261	1.4631
3.1	2.2418	1.3746	1.7640	0.0978	1.8174	1.7431
3.2	2.5838	1.6237	2.1188	0.1423	2.2526	2.0560
3.3	2.9258	1.8735	2.5069	0.2057	2.7226	2.3902
3.4	3.2678	2.1234	2.9219	0.2813	3.2170	2.7347
3.5	3.6098	2.3732	3.3615	0.3694	3.7323	3.0881
3.6	3.9518	2.6231	3.8254	0.4722	4.2671	3.4494
3.7	4.2938	2.8729	4.3061	0.5864	4.8211	3.8175
3.8	4.6359	3.1228	4.7985	0.7085	5.3936	4.1919
3.9	4.9779	3.3726	5.2994	0.8371	5.9839	4.5720
4.0	5.3199	3.6225	5.8063	0.9680	6.5910	4.9574
4.1	5.6619	3.8723	6.3183	1.1006	7.2142	5.3472
4.2	6.0039	4.1222	6.8347	1.2348	7.8527	5.7416

TABLE 3: (CONTINUED)

Elevation	Basin A1	Basin A2	Basin A3	Basin A4	Basin E1	Basin E2
	Storage Volume (AF)	Storage Volume (AF)	Storage Volume (AF)	Storage Volume (AF)	Storage Volume (AF)	Storage Volume (AF)
4.3	6.3459	4.3720	7.3549	1.3704	8.5066	6.1404
4.4	6.6880	4.6219	7.8783	1.5073	9.1753	6.5433
4.5	7.0300	4.8717	8.4045	1.6455	9.8580	6.9499
4.6	7.3720	5.1216	8.9332	1.7850	10.5545	7.3600
4.7	7.7140	5.3714	9.4641	1.9260	11.2646	7.7732
4.8	8.0560	5.6213	9.9966	2.0685	11.9881	8.1893
4.9	8.3980	5.8711	10.5305	2.2123	12.7248	8.6076
5.0	8.7401	6.1209	11.0653	2.3578	13.4772	9.0276
5.1	9.0821	6.3708	11.6001	2.5036	14.2392	9.4493
5.2	9.4241	6.6206	12.1350	2.6495	15.0027	9.8738

TABLE 5: 100 YEAR MAXIMUM STAGE CALCULATIONS

Basin	Weighted Soil Storage	Basin Runoff Volume	Total Basin Area	Total Basin Runoff Volume	Maximum Stage (see flood routing stage-storage)
A1	0.07"	14.82"	3.46 AC	4.27 AC-Ft.	3.69
A2	0.04"	14.85"	2.57 AC	3.18 AC-Ft.	3.82
A3	0.04"	14.85"	5.35 AC	6.62 AC-Ft.	4.16
A4	0.00"	14.90"	1.64 AC	2.04 AC-Ft.	4.78
E1	0.05"	14.84"	7.65 AC	9.46 AC-Ft.	4.44
E2	0.04"	14.85"	4.42 AC	5.47 AC-Ft.	4.13

Sample Calculation:

BASIN A1: Basin Runoff Volume

$$= \frac{(P-0.2S)^2}{(P+0.8S)}$$

$$= \frac{[14.9-0.2(0.07)]^2}{14.9+0.8\ (0.07)}$$

$$= 14.82"$$

Total Basin Runoff Volume

= (14.82in) (3.46 ac) (1 ft./12 in)

= 4.27 AC-Ft.

ATTACHMENT C

EXECUTED COPY

CONTRACT DOCUMENTS

RESURFACING RUNWAY 9-27 AND DRAINAGE
KEY WEST INTERNATIONAL AIRPORT
MONROE COUNTY, FLORIDA

Items Nos. 25437519401
A.I.P. No. 3-12-0037-2103
PFC Application No. 4 and No. 7
URS Corporation Contract No.: 12637814

Prepared for:

THE MONROE COUNTY
BOARD OF COUNTY COMMISSIONERS

MS. DIXIE M. SPEHAR, DISTRICT 1	MAYOR
MR. MURRAY E. NELSON, DISTRICT 5	MAYOR PROTEM
MR. GEORGE NEUGENT, DISTRICT 2	COMMISSIONER
MR. CHARLES "SONNY" McCOY, DISTRICT 3	COMMISSIONER
DR. DAVID P. RICE, DISTRICT 4	COMMISSIONER

Prepared by:
URS CORPORATION
JANUARY 2003

APPENDIX "D"

DRAINAGE REPORT

RESURFACING RUNWAY

TABLE OF CONTENTS

WATER QUALITY SUMMARY (5 YEAR - 24 HOUR STORM)

Basin	Minimum Elevation at wich ruoff exits basin	Basin Storage Volume at this minimun Elevation(AF)	Required Water Quality Retention Volume (AF)
A5	2.9	2.66	1.43
A6	2.9	4.15	1.86
E3	2.9	2.78	1.08

Note:
In all the proposed basins the Water Quality that will be provided is more than the required Water Quality calculated following the criteria set for Key West.

100 MAXIMUM STAGE CALCULATIONS

Basin	Weighted Soil Storage	Basin Runoff Volume	Total Basin Area(AC)	Total Basin Runoff Volume (AF)
A5	0.4	14.43"	10.68	12.84
A6	0.42	14.40"	14.87	17.84
E3	0.26	14.59"	7.9	9.61

Sample Calculation:

Basin A1: Basin Runoff Volume:

$$= \frac{(P-0.2S)^2}{(P+0.8S)}$$

$$= \frac{[14.9-0.2(0.4)]^2}{(14.9+0.8(0.4)}$$

= 14.43"

Total Basin Runoff Volume:

= (14.43 in) (10.68 ac) (1 ft/12 in)

= 12.84 AC_FT

ATTACHMENT D

KEY WEST INTERNATIONAL AIRPORT
KEY WEST, FLORIDA

DRAINAGE REPORT
FOR
HANGAR DEVELOPMENT, TAXILANES AND APRON

URS Contract No. 12637972

Prepared By:

URS Corporation
7650 Corporate Center Drive
Suite 400
Miami , FL 33126
Tel: 305.262.7466
PE LIC. # EB 00000002

12/18/03

JUAN C. GARCIA
P.E. #46597

DECEMBER, 2003

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25 YEAR –72 HOUR STORM SUMMARY:

By comparing the pre-development runoff curve numbers for both basins (B-1 and Parking Lot) with the post- development runoff curve numbers, it is seen that the runoff curve numbers are the same. As a result, the total basin runoff under pre-development conditions is the same as the total basin runoff under pre-development conditions.

The Node Maximum Condition results for Basin B-1 shows a maximum stage of 2.84; this demonstrates during a 25 year – 72 hours storm there will not be any offsite discharge (since the elevation at which runoff is discharges offsite is 3.50.

TABLE 2A: PRE-DEVELOPMENT AND POST-DEVELOPMENT BASIN CURVE NUMBER CALCULATIONS (BASIN: B-1)

Conditions	Percent Pervious Area	Average Pervious Area Ground Elevation	Design Water Table Elevation	Average Distance to Water Table	Developed Available Soil Storage	Weighted Soil Storage	Basin Curve Number
Existing Conditions	40%	2.5	1.5	1.00	0.6"	0.24	98
Proposed Conditions	21%	2.7	1.5	1.20	0.98"	0.21	98

TABLE 2B: PRE-DEVELOPMENT AND POST-DEVELOPMENT BASIN CURVE NUMBER CALCULATIONS (BASIN : PARKING LOT)

Conditions	Percent Pervious Area	Average Pervious Area Ground Elevation	Design Water Table Elevation	Average Distance to Water Table	Developed Available Soil Storage	Weighted Soil Storage	Basin Curve Number
Existing Conditions	19%	2.8	1.5	1.30	1.17"	0.22	98
Proposed Conditions	9%	3.1	1.5	1.60	1.74"	0.16	98

$$CN = \frac{1000}{0.24+10}$$

CN = 97.65

CN = 98

URS

Made by: GP Date: 5/5/2006
Checked by: Time:

KEY WEST INTERNATIONAL AIRPORT
STORMWATER MANAGEMENT
STORAGE VOLUME - 100 YR RUNOFF VOLUME ANALYSIS

SCS METHOD - HANGAR DEVELOPMENT TAXILANES AND APRONS

CN = 98 [Pg. 6]

S = Potential Maximum Retention

S = 1000 / CN - 10

S = 0.20 Inches

P = Precipitation

P = 14.90 Inches

Q = Accumulated Runoff

$$Q = \frac{(P - 0.2\,S)^2}{P + 0.8\,S}$$

Q = 14.66 Inches

V = Runoff Volume

V = Q x A

V = 14.66 Inches * 4.32 Acres

RUNOFF VOLUME = 229,859 Cubic Feet

RUNOFF VOLUME = 5.28 Acre-Feet

Advanced Interconnected Channel & Pond Routing (ICPR Ver 2.21)

KEY WEST INTERNATIONAL AIRPORT
HANGAR DEVELOPMENT, TAXILANES AND APRON

********** Input Report **********

--------Class: Node----------

Name: N-1 Base Flow(cfs): 0 Init Stage(ft): 2
Group: BASE Warn Stage(ft): 3.5
Comment: Stage VS volume for Basin B-1

Stage(ft)	Volume(af)	Bottom Area(ac): 0
2	0.0001	
2.1	0.002	
2.2	0.012	
2.3	0.032	
2.4	0.039	
2.5	0.094	
2.6	0.174	
2.7	0.289	
2.8	0.442	
2.9	0.623	
3	0.821	
3.1	1.036	
3.2	1.274	
3.3	1.54	

--------Class: Node----------

Name: N-OUTFLL Base Flow(cfs): 0 Init Stage(ft): 1.5
Group: BASE Warn Stage(ft): 99
Comment:

Time(hrs)	Stage(ft)
0	1.5
100	1.5

--------Class: Operating Table----------

Name: WELL Type: Rating Curve
Comment: Well capacity in Basin B-1

U/S Stage(ft)	Discharge(cfs)
1.5	0
2	3.14
2.1	3.77
2.2	4.4
2.3	5.02
2.4	5.65
2.5	6.28
2.6	6.91
2.7	7.53
2.8	8.16
2.9	8.79
3	9.421
3.1	10.05
3.2	10.68
3.3	11.3